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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,775	12/30/2003	Christopher Cave	I-2-0564.1US	8211

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VOLPE AND KOENIG, P.C.
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PHILADELPHIA, PA 19103

EXAMINER

MOUTAOUAKIL, MOUNIR

ART UNIT	PAPER NUMBER
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2619

MAIL DATE	DELIVERY MODE
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12/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/748,775	Applicant(s) CAVE ET AL.	
	Examiner Mounir Moutaouakil	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 24 is/are pending in the application.
- 4a) Of the above claim(s) 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 09-25-2007 has been entered and considered.
Claims 1-14 are pending in this application.
Claims 14-23, and 25 are canceled.
Claim 24 is withdrawn.
Claims 1-14 remain rejected as discussed below.

Restriction

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
Group I, claims 1-14 are drawn to seamless handover.
Group II, claim 24 is drawn to soft/softer/hard handover.

The inventions are distinct, each from the other because of the following reasons:

Invention I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions are:

I: a method for soft/softer handover using different cells/sectors time slots synchronization, classified in class 455, subclass 436.

II: a method of calculating cell load/congestion in order to decide the type handover that needs to be accomplished, class 370, subclass 332.

3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Steven Gelman on 12-06-2007 a provisional election was made with traverse to prosecute the invention of group I, claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claim 24 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vadgama (US 2003/0083069) in view of Bottomley (US 6,473,602) and further in view of Malek et al (US 5,822,313). Hereinafter referred to as Malek.

Regarding claims 1 and 6, Vadgama discloses a method for soft/softer handover in a wireless hybrid time division/code division multiple access communication system (see page 12 paragraph [0167]. The system uses a hybrid TDMA/CDMA), the method comprising for a wireless transmit/receive unit (WTRU) (See figure 1, MU). The WTRU is able to determine the currently used uplink and downlink timeslots of the WTRU in a current cell/sector (see page 5, paragraph 0073, data is transmitted between the base station and the mobile unit); and after initiating soft handover, communicating same uplink and downlink data with the current cell/sector using the currently used uplink and downlink timeslots (see page 5, paragraph 0077. during or after the soft handover, the mobile terminal maintains the same uplink/downlink data with the current cell).

Vadgama discloses all the limitations of the claimed invention with the exception of assigning uplink and downlink timeslots to the WTRU for a handover cell/sector. The assigned handover cell/sector uplink and downlink timeslots are different timeslots than the currently used current cell/sector uplink and downlink timeslots. However, Bottomley discloses a mobile assisted handoff radio communication system. The system assigns a downlink and uplink time slots, different from the current data uplink and downlink time slots (see column 1 line 62-column 2 line, 16, handover measurements are communicated via a control channel). Thus, it would have obvious to the person of ordinary skill in the art at the time of the invention to implement the method of assigning uplink and downlink timeslots to the mobile terminal for handover, different from the data uplink downlink time slots, as taught by Bottomley, into the handover communication system of Vadgama. The motivation for assigning a different uplink and downlink to the mobile unit for a handover being that it will make section/cell handover more feasible and efficient.

Vadgama and Bottomley disclose all the limitations of the claimed invention, as disclosed above, with the exception that the handover and the current time slots are synchronized. However, Malek, in a seamless handover TDMA system, teaches a method of synchronizing the basestations' time slots for the purpose of achieving a non-detectable handover to another base station. Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the method of synchronizing the handover and the current time slots, as taught by Malek (col.2, lines

43-60), into the handover method of Vadgama in view of Bottomley for the purpose of achieving a seamless handover.

Regarding claim 2. Vadgama discloses all the limitations of claim 1.

Vadgama does not disclose the assigning handover cell/sector uplink and downlink timeslots to the WTRU is only to timeslots having a same direction as timeslots in the current cell/sector. However, Bottomley discloses a mobile assisted handoff radio communication system. The system assigns handover cell/sector downlink and uplink time slots to the mobile unit having the same direction as timeslots in the current cell/sector (see column 1 line 62-column 2, line 16, handover measurements are communicated via a control channel). Thus, it would have been obvious to the person of ordinary skill in the art at the time of invention to implement the method of assigning handover cell/section handover uplink/downlink timeslots for the mobile unit having the same direction as timeslots in the current cell/sector, as taught by Bottomley, into the handover communication system of Vadgama. The motivation for assigning handover cell/sector uplink and downlink timeslots to the WTRU is only to timeslots having a same direction as timeslots in the current cell/sector being that it will make section/cell handover more feasible and efficient.

Regarding claims 3, and 7. Vadgama discloses a method wherein the uplink and downlink data is decoded using a joint detector configured to only process signals sent by a same scrambling code (see figure 9, elements 268 and 270).

Regarding claim 4. Vadgama discloses a method, which further comprises one set of the same uplink data having a highest received signal quality received by each

cell/sector being selected as decoded uplink data (see page 2, paragraph 2. the cell with the highest signal quality is chosen as decoded uplink data).

Regarding claims 5, and 9. Vadgama discloses a method, which further comprises combining both sets of the same downlink data as decoded downlink data (see figure 8, element 242. the system comprises a downlink data combiner/selector).

Regarding claim 8. Vadgama discloses a method where the WTRU further comprising a buffer for storing the detected received downlink data for the first and handover cell/sector (see paragraphs 167 and 168. the mobile unit receives handover information and data. inherently, the mobile unit must have a buffer or a memory to store and process the received data and handover information).

Regarding claim 10. Vadgama discloses a handover method wherein a transmission power level of the first cell/sector transmitted uplink data is based on a received signal power level (RSCP) of a channel transmitted by the first cell/sector and a transmission power level of the handover cell/sector transmitted uplink data is based on a RSCP of a channel transmitted by the second cell/sector (See paragraphs 76-78. the mobile unit is in communication with two or more base stations where the strengths of the various signals are taken into account).

Regarding claim 11. Vadgama discloses a WTRU wherein the RSCP of the first and handover cell/sector channels are determined in a same radio frame (see paragraph 73).

Regarding claim 12. Vadgama discloses all the limitations of the subject matter of claim 6.

Vadgama does not disclose that the first and handover cell/sector channels are not in a same radio frame. However, Bottomley discloses a mobile assisted handoff radio communication system. The system assigns a downlink and uplink time slots, different from the current data uplink and downlink time slots (see column 1 line 62-column 2, line 16, handover measurements are communicated via a control channel). Thus, it would have obvious to the person of ordinary skill in the art at the time of the invention to implement the method of assigning uplink and downlink timeslots to the mobile terminal for handover, different from the data uplink downlink time slots, as taught by Bottomley, into the handover communication system of Vadgama. The motivation for assigning a different uplink and downlink to the mobile unit for a handover being that it will make section/cell handover more feasible and efficient.

Regarding claim 13. Vadgama discloses a WTRU wherein a transmission power level of the first cell/sector uplink communication is based on a pathloss of a channel transmitted by the first cell/sector and a transmission power level of the handover cell/sector is based on an offset of the first cell/sector pathloss (see paragraph 105, the strength of the signal quality is influenced by the path used by first and handover signals).

Regarding claim 14. Vadgama discloses a WTRU where the offset is updated periodically (see paragraph 108. the control signals are updated periodically).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

When responding to this office action, applicants are advised to clearly point out the patentable novelty which they think the claims present in view of the state of the art disclosed by the references cited or the objections made. Applicants must also show how the amendments avoid such references or objections. See 37C.F.R 1.111(c). In addition, applicants are advised to provide the examiner with the line numbers and pages numbers in the application and/or references cited to assist examiner in locating the appropriate paragraphs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mounir Moutaouakil whose telephone number is 571-270-1416. The examiner can normally be reached on Monday-Thursday (1pm-4: 30pm) eastern time.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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MM
Mounir Moutaouakil
Patent Examiner
12-06-2007



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